

Appl. No. 10/813,714
 Amdt. dated January 27, 2006
 Reply to Office Action of November 25, 2005

Amendments to the Specification

Please replace paragraph [035] with the following amended paragraph:

[035] The degree of the correction by using the distortion correction table is, for example, shown in FIG. 3. Let the image of checker pattern 90 be acquired by the camera 10 in the middle range distance and the barrel distortion be generated, an appropriate correction is obtained when a distortion correction table made for a middle range distance is used for the distortion correction as shown by checker pattern 92. On the other hand, an over-correction such as a pin cushion distortion is obtained as shown in the checker pattern 93 when a distortion correction table made for a long range distance is used for the distortion correction and an under-correction such as a barrel distortion is obtained as shown in the checker pattern 91 when a distortion correction table made for a short range distance is used for the distortion correction.

Please replace paragraph [037] with the following amended paragraph:

[037] The directional mapping table 32 is, as shown in FIG. 2(b), to show the correspondence between the coordinative position (u' , v') of the picture element on the corrected image and the incidental angle of the light, being emitted from a light spot in the space to be viewed by the cameras 10, to a reference point on the optical axis which is penetrating a certain reference plane in the optical system of the cameras 10. The definition of the incidental angles $\alpha 1$, $\alpha 2$, γ is as follows.

- $\alpha 1$: the horizontal deviation angle from the optical axis MR of the camera CR regarding the horizontal plane projection of the vector D1 expanding from the reference point to the object OB
- [[$\alpha 2$]] γ : the vertical deviation angle from the optical axis MR of the camera CR regarding the vertical plane projection of the vector D1 expanding from the reference point to the object OB
- [[γ]] $\alpha 2$: the horizontal deviation angle from the optical axis ML of the camera CL regarding the horizontal plane projection of the vector D[[1]]2 expanding from the reference point to the object OB

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Please replace paragraph [051] with the following amended paragraph:

[051] All of the means used in the present ranging apparatus as the image input means 20, the corrective computation means 40, the corrected image selection means 50 and the ranging computation means can be realized with a computer program by which the central processors in the computer, graphic processors and image scanners cooperate for the designated processes and purposes. The distortion correction tables 31 are constructed in a data base that facilitates a simple retrieval operation. Collectively, this is indicated by the boxed section 2 in Fig. 1.